

What is claimed is:

- 1 1. A silent chain for restraining chordal action and improving noise and oscillation  
2 performance comprising:  
3 a plurality of link plates interleaved in rows, each link plate having a pair of  
4 teeth, each tooth of the pair of teeth having an inside flank and  
5 outside flank;  
6 the inside flank and the outside flank being formed such that when the  
7 chain is pulled straight the inside flank of a first link plate in a link  
8 row projects relative to the outside flank of a second link plate in  
9 another link row adjacent to and overlapping with the link row,  
10 satisfying a relationship  $0.021 * P \leq \delta_{\max} \leq 0.063 * P$ , where  $P$  is a  
11 chain pitch and  $\delta_{\max}$  is a maximum projection of the inside flank of  
12 the first link plate relative to the outside flank of the second link  
13 plate.
- 1 2. The silent chain of claim 1, wherein the inside flank and the outside flank are  
2 formed such that  $0.035 \leq P * \delta_{\max} \leq 0.063 * p$  is satisfied.
- 1 3. The silent chain of claim 1, wherein the outside flank is formed of a flat surface and the  
2 inside flank is formed of a circular arc surface.
- 1 4. The silent chain of claim 1, wherein the link plates further comprises a first link plate  
2 having a first maximum projection  $\delta_{1\max}$  and a second link plate having a second  
3 maximum projection  $\delta_{2\max}$ , different than the first maximum projection  $\delta_{1\max}$ ,  
4 wherein the first link plate and the second link plate are in a random pattern along  
5 the length of the chain.
- 1 5. The silent chain of claim 1, wherein the link plates further comprises a first link  
2 plate having a first chain pitch  $P_1$  and a second link plate having a second  
3 chain pitch  $P_2$ , different than the first chain pitch  $P_1$ , wherein the first link  
4 plate and the second link plate are in a random pattern along the length of  
5 the chain.